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Conference Abstract

Global Lepidoptera Index: Progress and Issues with Developing a Comprehensive Global Checklist of Moths and Butterflies

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Abstract

Lepidoptera (moths and butterflies) form one of the four largest animal orders, with published estimates that around 174,250 species had been described up to 2009 (Chapman 2009). Many species are conspicuous, charismatic and regularly recorded by citizen scientists. As a result, iNaturalist contains more than 15 million Lepidoptera observations (10.5% of all observations), and the Global Biodiversity Information Facility (GBIF) includes more than 83 million occurrence records for the group from all sources (3.5% of all biodiversity data and 9.8% of all non-bird data).

A modern and comprehensive checklist of global moths and butterflies would therefore play a significant role in improving our ability to interpret biodiversity patterns and change. However, there is still no dataset that adequately covers the order, and good accessible digital checklists exist for a minority of families.

The Global Lepidoptera Names Index (LepIndex) has served as the primary checklist for Lepidoptera used by Catalogue of Life (COL), the Global Biodiversity Information Facility (GBIF) and other global biodiversity informatics initiatives, with selected families sourced for other well-curated projects. LepIndex is the digitised version of a card index developed and maintained over decades at the Natural History Museum, London. Its intended purpose was to link published species names with the original literature references.

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LepIndex includes most names published prior to around 1985 (with some geographical bias) and additions for some groups up to around 1995. Since the card index was developed purely as a nomenclatural resource, no effort was made to track changes in generic placement and generally reflect taxonomic opinion from the time when each card was added. As a result, binomial combinations in LepIndex do not necessarily reflect either the original author's published binomial or contemporary classification. In superfamilies such as Gelechioidea and Noctuoidea, which have undergone significant reorganisation in the light of modern findings, many names are not associated even with the currently recognised family for the species.

LepIndex has been migrated to TaxonWorks and is now maintained as the Global Lepidoptera Index (GLI), but addressing a shortfall of nearly 40 years of active taxonomy and fixing other legacy issues remains a major challenge. COL has recently worked with several groups of taxonomists to develop modern digital checklists for several families, but some groups can only practically be improved through edits to GLI.

This presentation will summarise progress and metrics indicating the scale of the remaining task and the effort that will be required to maintain a comprehensive checklist that rapidly and accurates reflects new taxonomic findings.

Keywords

Catalogue of Life, LepIndex, species list

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Conflicts of interest

The authors have declared that no competing interests exist.

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